

## **Role of the TMDL and Next Steps in Improving Temperature in the Main Stems. October 1, 2002 - Federal Caucus Meeting**

The overall process for improving water quality as laid out in the Clean Water Act involves several steps. First, the desired water quality is defined via state water quality standards. Second, waters of a lower quality than the water quality standards are identified on state 303(d) lists (also known as “Lists of Impaired Waterbodies”). Third, a Total Maximum Daily Load (TMDL) is established for waters on the 303(d) list. Fourth, implementation plans are developed by the state to achieve the TMDL. Finally, the TMDL is implemented through the NPDES Permit Program, State Water Quality Standards Certification Program, the States Non-point Source Management Program and other appropriate mechanisms.

Often the TMDL and the implementation plan are developed together and there may even be iterative manipulation of the two until a workable mix is achieved. In the case of the main stems temperature TMDL, the two have been kept somewhat separated. Interest in temperature in the main stems peaked during development of the 2000 FCRPS BIOP. Many believed that elevated temperatures played a role in the reduction of salmon runs, while others believed that temperature in the main stems had not changed significantly from natural conditions. Further, the water quality standards do not establish a clear target for temperature and require considerable analysis. So it wasn't clear if there was a temperature problem, how severe it was or what was causing it.

The BIOP included a long term goal of compliance with water quality standards and an RPA for development of a water quality plan to achieve that long term goal. The water quality plan called for in the BIOP is essentially a TMDL implementation plan or at least a good start on an implementation plan. So the intent of this TMDL was to establish the goals for the water quality plan. Essentially, the role of this TMDL in improving temperature in the Columbia/Snake River main stems has been to:

1. quantify the temperature problem on the main stems;
2. define the temperature targets;
3. determine the level of improvement needed.

The next step in improving temperature in the main stems is to develop the implementation plan. The agencies developing the TMDL have little expertise in the operation of dams, so the water quality plan called for by the BIOP and developed by the action agencies is the best mechanism for developing an implementation plan. The implementation plan should accomplish the following:

- determine what, if anything, can be done at dams to improve temperature;
- determine the costs;
- determine the benefits;
- form the basis for a decision to:
  - implement measures at the dams to achieve water quality standards; or

- recognize that achievement of water quality standards is not possible and amend the water quality standards.

The states take the lead for TMDL implementation planning. In this case, the states plan to develop a draft implementation strategy to issue along with the draft TMDL. The strategy will be a general document that describes how the TMDL implementation plan will be developed. The states envision that implementation planning will be a cooperative undertaking with the river users affected by the TMDL and will take some time. It may require sophisticated water quality modeling to determine the efficacy and effects of implementation measures at dams and it may require data collection to support the modeling. The states also envision that there may be iterative manipulation of the TMDL and the implementation plan to achieve the right mix for improving temperature in the main stems. Further, the states are aware that there is a possibility that temperature standards in the main stem may not be achievable. In that case, both the TMDL and the analyses in the implementation plan will be important components of the process to amend water quality standards.